

CLAIMS

What is claimed is:

- 1 1. A device, comprising:
 - 2 a pressure vessel having a first end and an opposing second end;
 - 3 a sealable port in each of the opposing ends of the pressure vessel;
 - 4 a vessel rail contained entirely within the pressure vessel, the vessel
 - 5 rail having a first end adjacent the first end of the pressure
 - 6 vessel and an opposing second end adjacent the second end
 - 7 of the pressure vessel;
 - 8 a movable rail disposed adjacent each of the opposing ends of the
 - 9 pressure vessel, each movable rail having a first end and an
 - 10 opposing second end, the first end of each movable rail
 - 11 being movable between a first position in which the first end
 - 12 of the movable rail is within the pressure vessel and
 - 13 contiguous with the first end of the vessel rail, and a second
 - 14 position in which the first end of the movable rail is outside
 - 15 the pressure vessel such that the sealable ports can be
 - 16 sealed.
- 1 2. The device of claim 1, wherein the vessel rail has an upper surface
 - 2 with a length extending from the first end of the vessel rail to the
 - 3 second end of the vessel rail and the vessel rail is movable
 - 4 perpendicular to the length between a first position and a second
 - 5 position, the first and second ends of the vessel rail in the first
 - 6 position being contiguous with the first ends of the movable rails in
 - 7 their first positions.

1 3. The device of claim 2, further comprising a heating element located
2 within the pressure vessel between the first and second ends of the
3 vessel rail such that the upper surface of the vessel rail is above the
4 heating element when the vessel rail is in the first position and
5 below the heating element when the vessel rail is in the second
6 position.

1 4. The device of claim 1, wherein the second ends of each of the
2 movable rails is outside the pressure vessel and the device further
3 comprises a loading rail with a hinged connection to the second
4 ends of each of the movable rails such that each movable rail can
5 fold at approximately a right angle to the connected loading rail to
6 move to the second position.

1 5. The device of claim 1, wherein the movable rail moves from the
2 first position to the second position by moving away from the
3 vessel rail in a direction of the length of the movable rail.

1 6. A device, comprising:
2 a vessel means for providing a pressure-tight chamber;
3 port means for allowing workpieces to move into and out of the
4 vessel means;
5 a first rail means for supporting the workpieces being moved into
6 the pressure vessel, the first rail means being contained
7 entirely within the vessel means;

8 a second rail means for supporting the workpieces being moved
9 into the pressure vessel, the second rail means being
10 movable between a first position in which the first and
11 second rail means provide a substantially smooth and
12 straight upper surface and a second position in which the
13 port means can be sealed.

1 7. The device of claim 6, wherein the first rail means is further for
2 raising and lowering the workpieces within the vessel means.

1 8. The device of claim 7, further comprising a heating means for
2 heating the workpieces.

1 9. The device of claim 6, further comprising a third rail means for
2 supporting the workpieces being moved into the pressure vessel,
3 the third rail means being located entirely outside the vessel
4 means.

1 10. A pressure-tight furnace, comprising:
2 a pressure vessel having a first end and an opposing second end;
3 a sealable port in each of the opposing ends of the pressure vessel;
4 a heating element located within the pressure vessel;
5 a pair of parallel vessel rails contained entirely within the pressure
6 vessel, each vessel rail having a first end adjacent the first
7 end of the pressure vessel and an opposing second end
8 adjacent the second end of the pressure vessel;

two pairs of movable rails disposed adjacent each of the opposing ends of the pressure vessel, each movable rail having a first end and an opposing second end, the first end of each movable rail being movable between a first position in which the first end of the movable rail is within the pressure vessel and contiguous with an adjacent end of the vessel rail, and a second position in which the first end of the movable rail is outside the pressure vessel such that the sealable ports can be sealed.

11. The furnace of claim 10, wherein the pair of vessel rails each have an upper surface with a length extending from the first end of the vessel rails to the second end of the vessel rails and the vessel rails are movable perpendicular to the lengths between a first position and a second position, the first and second ends of the vessel rails in the first position being contiguous with the first ends of the movable rails in their first positions.

12. The furnace of claim 11, wherein the heating element is located within the pressure vessel between the vessel rails such that the upper surfaces of the vessel rails are above the heating element when the vessel rails are in the first position and below the heating element when the vessel rail are in the second position.

13. The furnace of claim 10, wherein the second ends of each of the movable rails is outside the pressure vessel and the furnace further comprises two pairs of loading rails, each loading rail having a

4 hinged connection to the second end of the adjacent movable rail
5 such that each movable rail can fold at approximately a right angle
6 to the connected loading rail to move to the second position.

1 14. The furnace of claim 10, wherein each of the movable rails moves
2 from the first position to the second position by moving away from
3 the vessel rails in a direction of the length of the movable rail.

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